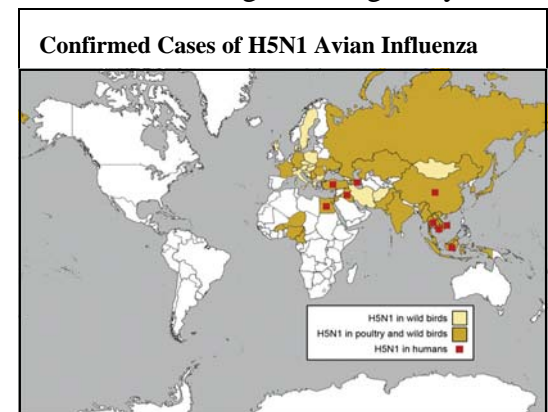




Avian Influenza and Pandemic Influenza: What's the Difference?

What is avian influenza (bird flu)? Avian influenza or 'bird flu' is an outbreak that is occurring primarily in birds, caused by the H5N1 strain of the influenza A virus. Initially, H5N1 was identified in wild birds. Over time, the wild birds infected the domestic poultry they came into contact with along their migratory routes.¹ Infection of domestic poultry was first seen in Asia but has now occurred in Europe and Africa² and is likely to spread to other parts of the world due to bird migration.

How do humans become infected with the H5N1 virus? The avian flu has been transmitted from domestic poultry to humans.³ At this time, the virus is not spreading from person-to-person. People have become infected as a result of direct or close contact with poultry or surfaces contaminated by respiratory and nasal secretions or feces from infected birds. Rare cases of human-to-human transmission may have occurred, but there is no evidence of transmission beyond one person.³ The geographic distribution of avian and human cases as of April 14, 2006 is presented in the figure (www.pandemicflu.gov).



How severe is the disease when it occurs in humans, and what are the symptoms? People who are infected display initial signs and symptoms that are consistent with other strains of influenza – fever, muscle aches, headache, fatigue. Chest x-rays of almost all H5N1-infected patients have shown infiltrates in the lungs, and most patients have required mechanical ventilation. The mortality rate, from progressive respiratory failure, among reported cases has been over 50%.⁴ Antiviral agents have been used to treat the affected patients with some success.⁵

What is pandemic influenza (pandemic flu)? Pandemic influenza is an influenza epidemic caused by any strain of the influenza virus that is easily spread from person-to-person and to which the human population has little or no immunity. Influenza pandemics occurred in 1918, 1957 and 1968. These pandemics were global in distribution and caused widespread illness and death.

Why are we concerned about pandemic flu now? Influenza viruses often mutate, changing their genetic structure. These mutations usually result in minor changes in the virus, but once in a while they cause major changes. Given the propensity of the influenza virus to change, we are concerned that the H5N1 virus, or another form of influenza virus, will mutate and cause a flu pandemic. For example, a mutation could result in the H5N1 virus so that human-to-human transmission is common. No one knows how likely this is to occur.⁶ With an increase in the number of birds infected and the number of humans infected, the opportunity for mutation the H5N1 virus that could result in a pandemic is increasing.⁵

What is being done and what can be done to contain avian influenza? People in areas where birds have been affected by the H5N1 virus are being advised to avoid direct contact with poultry and to ensure that all chicken and eggs are thoroughly cooked before consumption. Aggressive hand washing is also advised.⁵ Measures to protect domestic poultry from infection include quarantining or culling of infected poultry and isolating domestic poultry from wild birds.^{7,8}

What would be done if H5N1 developed the ability to spread from person-to-person, or another pandemic influenza virus emerged? Countries around the world and the World Health Organization are creating stockpiles of antiviral drugs. The WHO recommends dispensing these stockpiles, along with rigorous quarantine measures, in any area where human-to-human transmission of a new influenza virus begins in an effort to nip the epidemic in the bud. It is not clear how effective this strategy alone would be in the long term.² Other measures that might be used are similar to those that were used effectively to contain the SARS virus when it emerged in Toronto. A vaccine is unlikely to be available immediately since it takes up to 6 months to develop a vaccine against a new strain of flu virus.⁹ Personal hygiene measures such as hand washing and covering one's mouth when coughing and sneezing,¹⁰ which reduce dispersion of virus through respiratory secretions, are important in reducing the transmission of influenza viruses in general. In the U.S., national, state and local pandemic influenza preparedness plans are being developed. Information on preparations can be found at www.pandemicflu.gov and from local and state health departments.

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Mission: As part of a national network of Centers for Public Health Preparedness that are funded by the Centers for Disease Control and Prevention (CDC), the Yale Center for Public Health Preparedness, based at the Yale School of Public Health, works to ensure that frontline public health workers are prepared to respond to public health emergencies including natural disasters, acts of terrorism, and disease outbreaks.

*The purpose of this newsletter is to provide preparedness information for public health practitioners.
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